2.0 ALTERNATIVES

2.1 INTRODUCTION

This chapter describes the process for developing and evaluating alternatives for the Augusta River Crossing Study. It has five parts:

- Corridor alternatives
- Associated actions: Memorial Bridge, TDM/TSM/Multimodal, Connectors
- Preliminary environmental, cost and traffic impact analyses
- Corridor alternatives dismissed from further study
- Alternatives retained for further study, including projected traffic conditions and typical sections.

2. 2 CORRIDOR ALTERNATIVES

The consideration of corridor alternatives included: (1) the formation of preliminary corridor alternatives, including the base alternative (no-build), (2) engineering and environmental analyses, and (3) public and agency involvement to determine which corridor alternatives should be retained for further study.

2.2.1 Preliminary Corridor Alternatives Developed for Consideration

Development of preliminary corridor alternatives considered the following contraints:

- The location had to serve the study purpose and need as outlined in Chapter 1;
- The City Council of Hallowell opposed any alternatives that encroached upon Hallowell city limits (south of Augusta);
- Traffic studies indicate that potential river crossings are less likely to attract travelers if located too far north of the downtown Augusta area;
- Alternatives developed had to be acceptable to the local community, MDOT, FHWA, and state and federal resource and regulatory agencies and have reasonable construction costs.

A base alternative (no-build) and six preliminary build corridor alternatives were identified. Each build alternative consists of 1000-foot (300 meter) wide corridors originating at I-95 and terminating at a major easterly arterial. Corridors were identified using existing natural resource, land-use, topography, and zoning information to **avoid and minimize** adverse impacts to existing natural and cultural resources to the greatest extent practicable. The corridors are shown in Figure 2-1 and described below.

Using Design Hourly Volumes (DHVs) for a projected year of 2025, lane requirements were

[Figure 2-1 is available in the “Oversized Graphics from Chapter 2” link on the FEIS Home Page]

developed for each of the corridor alternatives. Two lanes were adequate for DHVs up to 2000 vehicles. For 2000-3000 vehicles, four lanes would be required and anything over 3000 vehicles may require six lanes.

The Base Corridor (No-build) Alternative

This corridor alternative reflects the present condition which ties I-95 to highways on the east side of the Kennebec River via Western Avenue and Memorial Bridge. The Base Alternative takes into consideration the maintenance necessary to maintain service at present levels.

Corridor Alternative A - Option 1

This corridor alternative involves constructing a 3.58-mile (5.76 km) limited access highway and bridge north of Augusta, including a new interchange with Interstate 95 just north of the Old Belgrade Road overpass. The highway would be four travel lanes wide (DHVs 1700-2700) west of Route 201/100 and two lanes wide (DHVs 1300-1700) from Route 201/100 to its terminus at Routes 202/3 near the Cony / Church Hill Road intersection. The only access points to this alternative would be at I-95 and Routes 104, 201/100, and 202/3.

Corridor Alternative A - Option 2

This corridor alternative is 3.45 miles (5.55 km) long and is similar to A-1 on the west side of the Kennebec River. Its course turns slightly more southerly as it crosses the river and it skirts the southwestern edge of the Tree Free sludge waste site (formerly Statler Tissue), rather than the northern edge. It terminates in the same location as Corridor A-1 and has the same lane configuration and conditions for access control.

Corridor Alternative B

This 2.96-mile (4.76 km) long alternative would begin at the same location on I-95 as Corridors A-1 and A-2, but would intersect Route 104 at a more southerly location. It would cross the Kennebec River at a point just south of Savage Park, intersect Route 201/100 and terminate at Routes 202/3 in the vicinity of Fort Western Tire. The lane configuration and conditions for access control are the same as with the previous corridor alternatives.

Corridor Alternative C

This corridor alternative is 2.87 miles (4.62 km) in length and would begin at a new Interstate 95 interchange located approximately half way between the two existing Augusta interchanges. It would follow the south bank of Bond Brook through the lower Bond Street /

Mount Vernon Avenue / Upper State Street / Water Street area and cross the Kennebec River in a northeasterly direction, terminating at the intersection of Routes 201/100 and 202/3. The lane configuration and conditions for access control are the same as with the previous corridor alternatives. This corridor would potentially extend State Route 3 from the intersection of Routes 201/100 and 202 to the new I-95 interchange. The lane configuration and conditions for access control are the same as with the previous corridor alternatives.

Corridor Alternative D

This corridor consists of **upgrading** Western Avenue to six travel lanes (DHVs 3500-4500) from the Exit 30 interchange easterly to Memorial Circle and constructing a new bridge to the south of the existing Memorial Bridge. The new bridge would have four travel lanes. This corridor would cross over Arsenal Street on the East side and terminate at the Hospital Street/ Eastern Avenue (Route 17) intersection.

Corridor Alternative E

This 2.10-mile (3.38 km) corridor would begin at a new interchange on I-95 in the vicinity of the Augusta-Hallowell town line and follow an easterly course along the Augusta side of the town line over Howard Hill. It would intersect Route 201/100 in the vicinity of Pine State Trading Company and continue across the Kennebec River, intersecting with Hospital Street and Route 9. A possible connector would then follow along the southern border of the Arboretum until turning north along the Cony Road and terminating at Eastern Avenue (Route 17). The conditions of access control are the same as with corridor alternatives A-1, A-2, B and C. The highway would be four lanes wide (DHVs 2100) west of Route 9 and two lanes wide (DHVs 1900) to the east.

2.3 ASSOCIATED ACTIONS

The existing traffic congestion and safety issues facing Augusta today result from a complex set of circumstances that have evolved over time. As part of the Sensible Transportation Policy Act process, this River Crossing Study is one component of an integrated approach to addressing Augusta's traffic problems. Separate but related projects, driven by similar factors as this study but with more narrowly defined scopes, will work in conjunction with this project to address overall deficiencies in Augusta's transportation system. These projects are described in detail below.

2.3.1 Memorial Bridge

The Memorial Bridge, constructed in 1949, is part of the National Highway System and currently serves as a primary gateway for east-west travel in the central Maine region. The

bridge also serves a large percentage of local traffic within Augusta. MDOT has identified structural defiencies in the aging bridge that will require major repair in the near future. The bridge is also functionally deficient because vehicular traffic is limited to two lanes and there are no shoulders to accomodate disabled vehicles, allow safe passage of emergency vehicles, or allow for repairs to be made while keeping the bridge open to 2-way traffic. In addition, the approaches on both sides are served by the rotaries, where congestion and other traffic incidents can seriously reduce the operational efficiency of the bridge.

It was originally anticipated that the functional, operational and structural deficiencies of Memorial Bridge would be addressed as part of this River Crossing Study. However, during the project development process, MDOT determined that the problems associated with the bridge would require the creation of a stand alone project. This determination was based in part on the following:

- The condition of the bridge deck deteriorated to the point that MDOT had to initiate an emergency deck maintenance project (spring-summer 1999). A 4-inch (10 cm) thick reinforced concrete wearing surface was applied and is expected to last 5-10 years, allowing additional time to make long-term decisions regarding the bridge.

- Local planning projects, such as the Capital Riverfront Improvement District and the State Facilities Master Plan were initiated. One goal of these projects is to develop strategies that best to address local transportation needs.

After determining that a separate planning effort would be required, MDOT initiated **the Augusta Memorial Bridge Study**. The scope of this study is specifically to address with the structural, functional and operational deficiencies in the existing bridge and its approaches and integrate the long-term goals of local planning efforts.

2.3.2 Capital Riverfront Improvement District

The 1999 Federal Energy Regulatory Commission (FERC) decision to remove the Edwards Manufacturing Dam on the Kennebec River resulted in a mitigation requirement that created a unique opportunity to form a City/State partnership in the Capital City. The State of Maine 119th Legislature created the **Capital Riverfront Improvement District (CRID)** to "protect the scenic character of the Kennebec River corridor while providing continued public access and an opportunity for community and economic development and to protect the historic, archaeological, recreational and ecological resources identified within the district and the constructed and natural environment of the district".

The CRID is generally described as the area between the Augusta/Chelsea/Hallowell line at the south, the former location of the Edward's Manufacturing Dam to the north, State Street on the west, and Bangor Street on the east. The District includes the historic downtown, surrounding neighborhoods, State office facilities on both sides of the River, the Hospital and the city and county government centers. It is managed by a 16-member governing board comprised evenly of state officials, and citizens and officials representing Augusta.

The first task of the Governing Board was to commission the development of a Master Plan for the CRID which will focus on revitalizing the downtown and providing public access to the Kennebec River. That planning process has been underway since September 1999. The Master Plan is required by the Board's bylaws to be compatible and consistent with the master planning for areas within the boundaries of the Capitol Planning Commission, as well as consistent with the City of Augusta's Comprehensive Plan and other jurisdictional plans. Once completed, the final draft of the Master Plan will be made available to the Legislature, and be presented to the City Council for adoption. Among a variety of considerations, the Plan is reviewing the functionality of the current transportation network in the core of the City and will articulate recommendations that promise the greatest success for the revitalization effort.

In addition to the CRID Master Plan development process, the State also commissioned the development of a **State Facilities Master Plan** for its facilities in the Augusta area. That Planning process began in the mid-1990's, was interrupted by a change in administration priorities, and resumed in early 1999. That Plan is nearing completion and recommends concentrating the State's facilities on its campuses on both sides of the Kennebec River.

Source: MDOT Photo Lab
GO Augusta! Trolley

2.3.3 TDM/TSM - Multi-modal

The STPA *Draft Analysis* in 1997 recommended the pursuit of a transportation demand management (TDM) program to reduce dependence on single-occupant vehicles in the Augusta area. Since that time, the MDOT-funded GO Augusta! project has begun to build

such a TDM program. An Augusta area carpool and vanpool has been established. Summer transit (trolley) services serving commuter routes from Gardiner and Winthrop and mid-day in-town routes are now in operation. These transit services supplement the year-round scheduled Augusta area transit service provided by KVTransit. In addition, GO Augusta! has begun planning to develop a network of bicycle routes in the area. Future work includes further analysis of TDM alternatives, funded in MDOT's *Biennial Transportation Improvement Program* for fiscal years 2000-01.

The State Facilities Master Plan also recommends devising incentives for ride-sharing and car-pooling and disincentives for employee parking immediately adjacent to state facilities.

2.3.4 Connectors

As the most northerly and southerly corridor alternatives for the Augusta River Crossing Project were being considered, the common existing connector between Routes 202/3 and Route 17 was identified as the Church Hill Road/Cony Road (Connector A). MDOT recognized that secondary impacts from increased traffic along this local urban street would have to be considered if a build alternative other than the upgrade (Corridor Alternative D) was selected. During the public participation process, local residents asked MDOT to consider new locations for a connection between Routes 202/3 and 17. In response, the Department developed a conceptual alternative on a new location for the purpose of comparing potential impacts (Connector B).

The locations of both potential connectors are shown in Figure 2-1. Limited resource data were collected for each connector and are included in this EIS to present a clearer picture of anticipated secondary impacts from possible build alternatives. Preliminary information collected for the Connectors revealed that Connector B has more adverse impacts to natural and cultural resources. In addition, current traffic projections do not support a new alignment (refer to Section 4.5.1 of this EIS).

2.4 ENVIRONMENTAL FEATURES AND PRELIMINARY COST ANALYSIS

2.4.1 U.S. Army Corps of Engineers (ACOE)—New England Division's Highway Methodology.

The purpose of the Highway Methodology is to integrate the ACOE Section 404 wetland permitting requirements under the Clean Water Act with the mandates of the NEPA process to ensure that only permittable corridor alternatives are retained, and to support the

dismissal of corridor alternatives. Information collected for the Highway Methodology included literature supplemental to that in the Environmental Baseline Survey (Vollmer 1994), field data collection, and meetings and discussions with federal, state, and local officials. Data required for the Highway Methodology focuses primarily on impacts to natural resources.

The information provided in this EIS will be used by the Corps to make a compliance determination under Section 404(b)(1) Guidelines and subsequently a permit decision. The Corps will evaluate the data provided and select the **Least Environmentally Damaging Practicable Alternative (LEDPA).** According to the Corps Highway Methodology, "Critical to the selection of the LEDPA is the recognition of the full range of NEPA alternatives and impacts in determining first which alternatives are practicable (in terms of logistics, technical aspects and costs) and second which are environmentally less damaging."

2.4.2 Preliminary Impacts to the Environment

Preliminary impact information, based on readily available resource data and information from previous Augusta studies, is presented in Table 2-1: *Predicted Environmental Effects for Corridor Alternative*s. This matrix identifies the anticipated impacts to key natural and social features within the study area.

2.4.3 Preliminary Cost Estimate

Preliminary cost estimates for the proposed corridor alternatives were developed by MDOT and are presented in Table 2-2.

2.4.4 Preliminary Traffic Impact Data - *From MDOT Bureau of Planning, Research and Community Services*

MDOT evaluated the transportation impacts of the corridor alternatives in terms of traffic volumes, travel delay, vehicle-miles traveled, and accident reduction. Baseline traffic data was drawn from the 1997 *Draft Analysis of Transportation Alternatives for the Augusta Area* (MDOT). In the judgment of MDOT Planning staff, these data present a reasonably current baseline for the analysis of present and future traffic conditions.

The impacts on travel delay are determined largely by the changes in traffic volumes and the capacities of the affected roadways. Changes in the number of vehicle-miles traveled are determined by travel route and by the distances saved (or not saved) by travelers diverted to new corridor alternatives. Estimates of accident reduction are based on changes in traffic volumes and differences in roadway characteristics.

[Table 2-1 is available in the “Oversized Graphics from Chapter 2” link on the FEIS Home Page]

[Table 2-2 is available in the “Oversized Graphics from Chapter 2” link on the FEIS Home Page]

Traffic Volumes

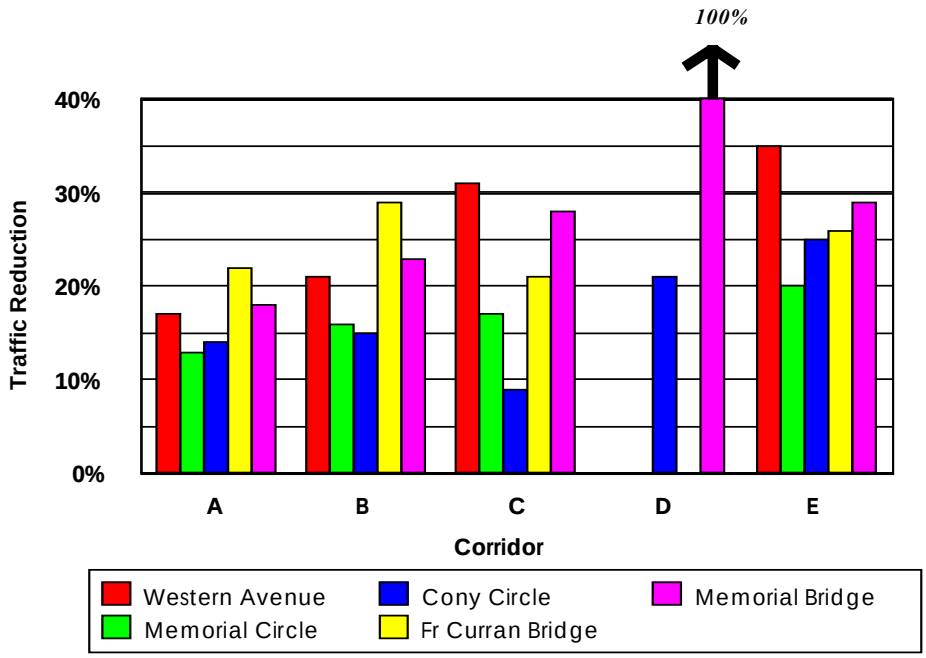
Table 2-3 and Figure 2-2 show for each alternative the percentage decrease in vehicular traffic anticipated at selected locations in Augusta's street and highway network. **The reductions are generally in the 10% to 30% range.** The exception is Corridor D which replaces the Memorial Bridge and bypasses Cony Circle, but has minimal impact on Western Avenue, Memorial Circle, and the Father Curran Bridge.

Table 2-3. Impact of Corridor Alternatives on Reducing Traffic at Selected Locations

Corridor	Percentage Traffic Reductions by Location				
	Western Ave	Memorial Circle	Cony Circle	Father Curran Bridge	Memorial Bridge
A	17%	13%	14%	22%	18%
A to Route 17	17%	13%	19%	23%	18%
B	21%	16%	15%	29%	23%
B to Route 17	21%	16%	21%	31%	23%
C	31%	17%	9%	21%	28%
D	0%	0%	21%	0%	100%*
E	35%	20%	25%	26%	29%

**** Alternative D removes and replaces Memorial Bridge and bypasses Cony Circle.***

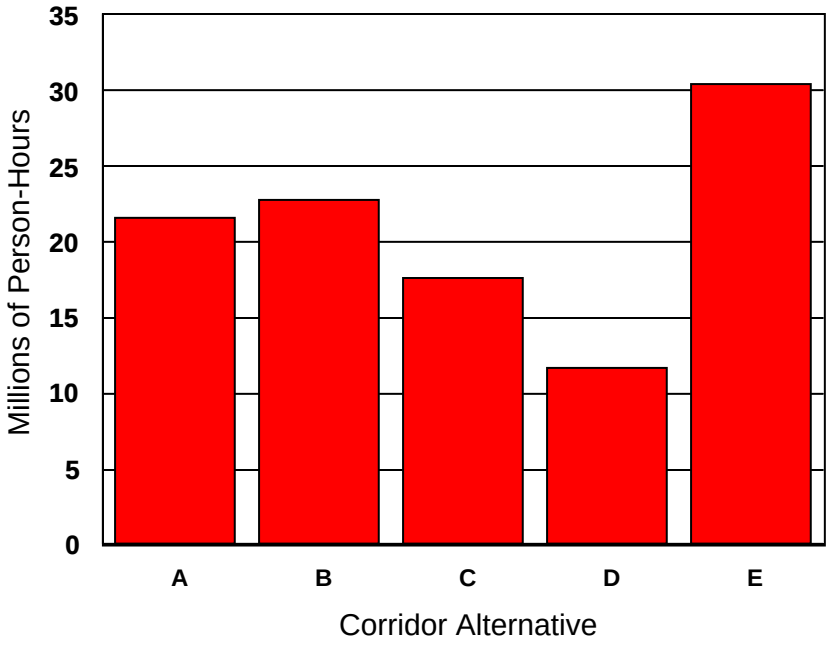
Figure 2-2. Percentage Traffic Reductions at Selected Locations



Travel Delay

Figure 2-3 shows the relative impacts of individual corridor alternatives on traffic congestion in the Augusta area if those corridor alternatives were in place during the period from 1995 to 2015. For purposes of comparison, congestion is measured in person-hours of delay, which is defined as the excess time experienced by travelers slowed or stopped in traffic. The numbers presented in Figure 2-3 represent the reductions in delay accumulated over the 20-year period.

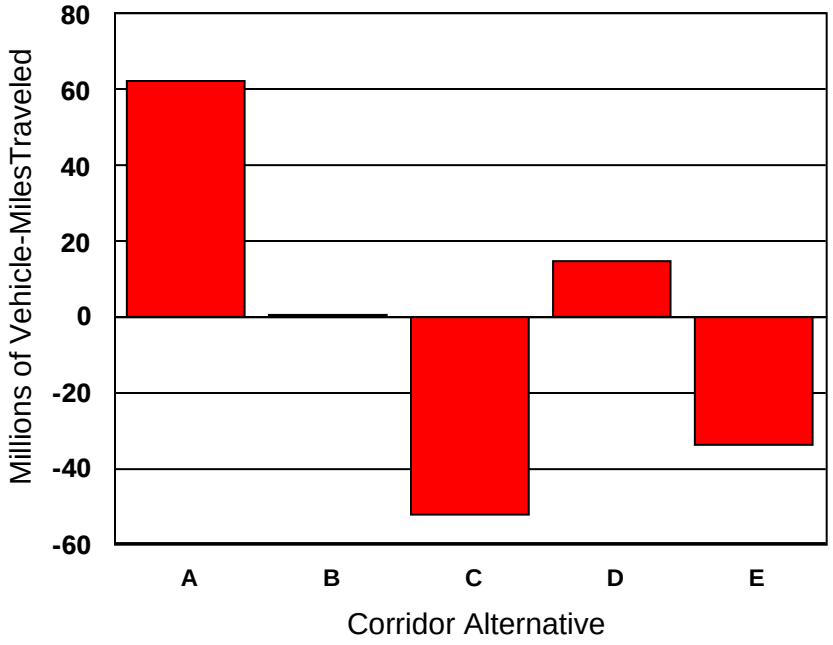
Figure 2-3. Predicted Reduction in Traffic Congestion



Vehicle-Miles Traveled

Figure 2-4 shows the impact of each proposed corridor alternative on vehicle-miles traveled (VMT) over the 20-year analysis period. Each corridor has an impact on travel patterns in the Augusta area. For some trips, the proposed alternative offers a route that is shorter in both time and distance when compared to existing routes. For other trips, the new corridor offers a route that is shorter in time but longer in distance. For still other trips, the existing route remains the most attractive. The combination of impacts on route choices results in either a net reduction or increase in VMT for the Augusta area as a whole. A change of 40 million vehicle-miles traveled is approximately equal to a one percent change in overall VMT on major roads and streets in the Augusta area. In all cases, the VMT change was less than two percent. Among the proposed corridor alternatives, A and D show a reduction in VMT, while C and E show an increase (negative reduction) in VMT, and B shows no change.

Figure 2-4. Predicted Reduction in Vehicle-Miles Traveled



Accidents

Figure 2-5 shows the expected impact of the corridor alternatives on reducing the number of traffic accidents annually in the region. The numbers in the chart represent the reduction in the number of accidents over a 20-year period. Reductions in the number of accidents are achieved in part by reducing VMT, but mainly by diverting traffic from locations with a high incidence of accidents (urban streets including the two rotaries) to locations with a low incidence of accidents (roadways with controlled or limited access). For the proposed corridor alternatives, reductions range from 700 to 2000 accidents in 20 years (35 to 100 accidents annually).

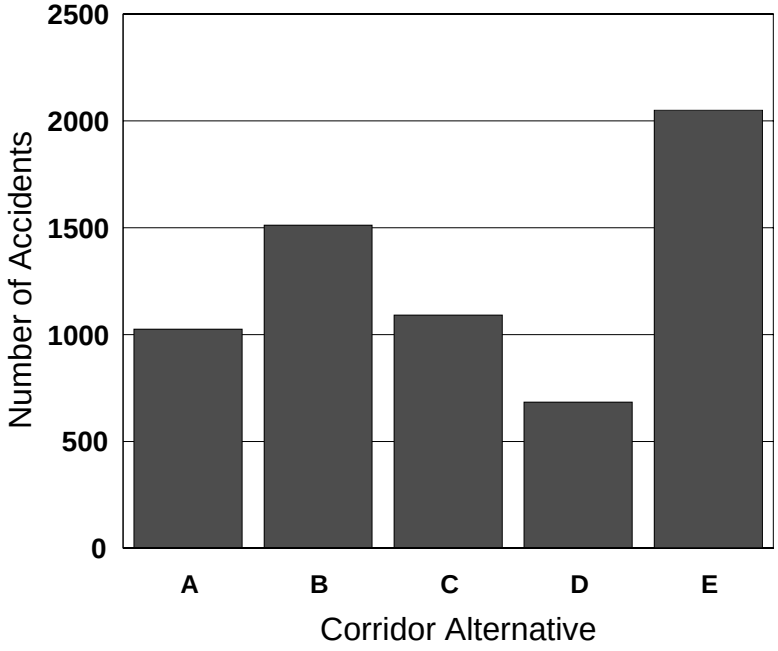
Heavy Trucks

Currently the Maine Turnpike and the State Highway System allow vehicles up to 100,000 pounds. The weight limit on the Federal Interstate System (I-95) is 80,000 pounds. As a result of this discrepancy, federal law requires all northbound vehicles over 80,000 pounds leaving the Maine Turnpike in Augusta to exit I-95 at the first available location, which is currently the Western Avenue interchange (Exit 30).

There has been local concern that alternatives to the north would not decrease the amount of through city trips because vehicles over 80,000 pounds would still have to exit I-95 at

Western Avenue and travel through downtown Augusta. Based on current through-traffic truck data, heavy vehicles (six tires and over) represent 6.0% of the traffic mix, where 2.4% are combinations (tractor-trailers), including **0.8%** that are over 80,000 pounds. Therefore a corridor to the north could take all through-truck traffic except for that **0.8%**. Potentially through-city combination traffic could be reduced up to two-thirds and total through city truck traffic could be reduced over 80%.

Figure 2-5. Predicted Reductions in Accidents

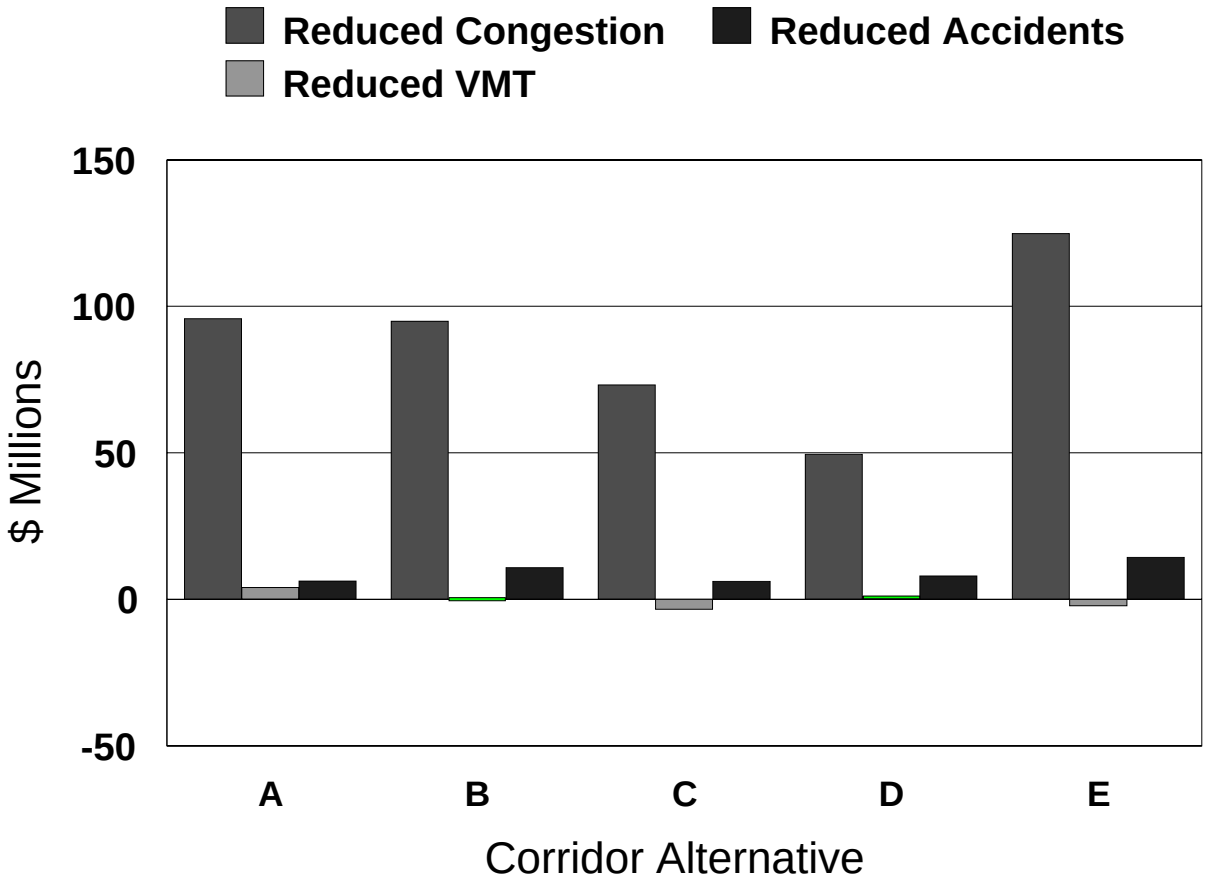


Transportation Benefits

Figure 2-6 summarizes the areawide transportation benefits of each corridor. These transportation benefits represent the dollar value of reductions in congestion (delay), travel (vehicle-miles traveled), and accidents. The transportation benefits have been totaled over a 20-year period (1995 to 2015) and discounted at a rate of 6% annually to a 1995 dollar value.

For each corridor, the reduction in congestion represents the greatest transportation benefit, with a present value ranging from $50 million to $125 million. Safety benefits from accident reductions range from $6 million to $14 million. Benefits from reduced vehicle miles traveled are $4 million or less. Overall, A, B, and E provide the best overall transportation benefits, with present worth near or exceeding $100 million dollars in each case.

Figure 2-6. Predicted Transportation Benefits of Corridor Alternatives



2.5 CORRIDOR ALTERNATIVES DISMISSED FROM FURTHER STUDY

Each corridor alternative was evaluated to determine its ability to satisfy the basic study purpose, while considering preliminary impacts to the natural and cultural environments of the study area, response from the PAC and public meetings, overall transportation benefits, and costs. Those corridors which did not meet purpose and need or had unacceptable impacts to natural or cultural resources and therefore could not be considered a LEDPA under Corps Section 404(b)(1) guidelines, were dismissed from further study. An interagency team comprised of state and federal resource and regulatory agency representatives concurred with the dismissal of corridor alternatives.

Corridor alternatives dismissed from further consideration and the reasons for their dismissal are as follows:

Corridor C would have an adverse impact to Bond Brook and its watershed, which has been identified as Atlantic Salmon habitat, and was determined to be the **most environmentally damaging alternative**. In addition, a large amount of retaining wall would be required because of the steep side slope along the south side of Bond Brook. This, combined with the required skew and length of a new river crossing, made this corridor one of the most expensive to construct and therefore **not practicable** in consideration of other alternatives.

Corridor D, the **upgrade** alternative located along existing Western Avenue, would require widening this street from I-95 to the Memorial Circle from a four lane roadway to a six lane roadway to accommodate future traffic. This widening would require the displacement of many businesses, resulting in **unacceptable economic impacts** to the affected businesses and the City of Augusta. The cost of relocating the affected businesses (estimated at $11.5 million) makes this alternative **not practicable**.

Though this corridor was dismissed, it was recognized that addressing the functional and structural deficiencies of the bridge and the operational deficiencies of the rotaries was necessary and should be addressed through a more narrowly defined project. As stated previously, this effort is being done through the newly initiated **Augusta Memorial Bridge Study** (see page 2-14).

Corridor E, the most southerly corridor alternative considered, was the first corridor dismissed from further consideration. Corridor E would cross an area in the southern portion of Augusta called Howard Hill, near the Augusta-Hallowell town line. Because the Hallowell City Council opposed any encroachment upon their city limits and there are development constraints to the north, this corridor had to cross through Howard Hill. The estimated profile through the Howard Hill area would require moving approximately 4 million cubic yards of earthen material, allowing for the maximum profile grades that should be considered for this arterial highway. Surficial geology maps also indicated shallow bedrock in this area, adding to removal costs. The extraordinary amount of material that would need to be excavated increased the overall preliminary cost estimate for this corridor by approximately $20-25 million. This is **not economically practicable** in consideration of the other available alternatives.

This corridor alternative also has more extensive wetland involvement than the other corridors, making it **second most environmentally damaging**. Approximately 41 acres (16.5 hectares) were identified based on initial mapping, by far the highest for any corridor.

In addition to natural resource and engineering constraints, this corridor alternative would require the displacement of the Pine State Trading Company's distribution complex and numerous single and multifamily dwellings in cohesive neighborhoods, resulting in **unacceptable social and economic impacts**.

2.6 ALTERNATIVES RETAINED FOR FURTHER STUDY AND PREDICTED EFFECTS

Build Alternatives A-1, A-2, and B are retained for further study. These are the practicable alternatives that satisfy the basic project purpose and result in the fewest impacts, based upon the preliminary environmental assessment, input from the PAC, and preliminary cost information.

The Base Corridor (no-build) consists of maintaining the status-quo by taking no action to improve the transportation facilities in the study area, and assumes the current level of maintenance on the existing major east-west arterials would continue. The Base Corridor does not satisfy the basic project purpose, but is retained to provide a baseline for comparison with the retained build alternatives.

The study areas for the retained alternatives have been reduced from the original 1000-foot (300 meter) corridors to 200-foot (60 meter) wide alignments, shown in Figures 2-7, 2-8 and 2-9. These alignments were located to **avoid and minimize** impacts to natural and cultural resources to the greatest extent practicable. The reduction in corridor size allows for more detailed data collection to better determine impacts from each retained alternative. Table 2-4 summarizes predicted environmental effects for the retained alternatives, based on the detailed analyses provided in Chapters 3 and 4.

2.6.1 Projected Traffic Conditions for Retained Alternatives

Table 2-5 summarizes projected traffic conditions on the National Highway System corridor between I-95 and Route 3 for the retained alternatives. No-build traffic growth projections from 1995 to 2025 indicate Annual Average Daily Traffic (AADT) may increase in this corridor by about 9000 vehicles. This translates approximately to a 1% annual increase in traffic volume, or 30% over 30 years. Alternatives A-1, A-2, and B have the potential of diverting most or all of the increased traffic to a new NHS route. None of the proposed alternatives will divert the 0.8% AADT that is comprised of trucks which exceed the 80,000 pound interstate weight limit (currently ± 310 trucks/day).

[Figure 2-7 is available in the “Oversized Graphics from Chapter 2” link on the FEIS Home Page]

[Figure 2-8 is available in the “Oversized Graphics from Chapter 2” link on the FEIS Home Page]

[Figure 2-9 is available in the “Oversized Graphics from Chapter 2” link on the FEIS Home Page]

[Table 2-4 is available in the “Oversized Graphics from Chapter 2” link on the FEIS Home Page]

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Table 2-5. Projected Traffic Conditions for Retained Alternatives

Alternative	Location	Annual Average Daily Traffic			Level of Service		
		1995	2005	2025	1995	2005	2025
No-Build*	Western Ave. w/o Armory St.	38,964	41,638	49,584	E	E	F
	Western Ave. w/o rotary	31,620	33,790	40,238	D	D	E
	Memorial Bridge	30,294	32,670	39,204	D	E	F
	Bangor St. n/o rotary	24,276	27,013	33,249	C	D	E
	Route 3 e/o Bangor St.	10,710	12,863	16,748	C	C	C
A - 1 and A - 2							
	Western Ave. w/o Armory St.	32,340	34,560	41,154	C	D	E
	Western Ave. w/o rotary	26,561	28,384	33,800	C	C	D
	Memorial Bridge	24,861	26,789	32,147	C	C	E
	Bangor St. n/o rotary	21,120	23,501	28,926	C	C	D
	Route 3 e/o Bangor St.	7,069	8,489	11,052	B	B	C
	New Roadway, I-95 to Rt. 104	10,162	11,956	15,343	B	B	B
	New Roadway, Rt. 104 to Rt. 201	11,104	13,064	16,765	B	B	B
	New Roadway, Rt. 201 to Rt. 3	7,684	9,040	11,601	B	B	B
B							
	Western Ave. w/o Armory St.	30,782	32,894	39,171	C	D	E
	Western Ave. w/o rotary	25,296	27,032	32,190	C	C	D
	Memorial Bridge	23,326	25,156	30,187	C	C	D
	Bangor St. n/o rotary	22,334	24,852	30,589	C	C	D
	Route 3 e/o Bangor St.	6,533	7,846	10,216	B	B	C
	New Roadway, I-95 to Rt. 104	12,393	14,580	18,711	B	B	B
	New Roadway, Rt. 104 to Rt. 201	15,119	17,788	22,827	B	B	C
	New Roadway, Rt. 201 to Rt. 3	10,906	12,830	16,466	B	B	C

*No-build is included for comparison.
Source: MDOT Bureau of Planning, Research and Community Services

2.6.2 Typical Sections and Design Considerations for Retained Alternatives

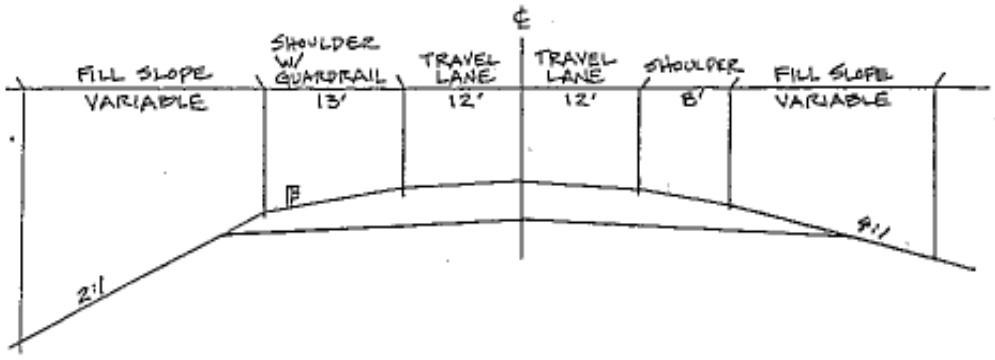
The alternatives described in this study are comprised of 2 and 4-lane segments based on the traffic data. A 2-lane highway segment would consist of two 12-foot (3.6 m) travel lanes and two 8-foot (2.4 m) shoulders for a total width of 40 feet (12.0 m) (see Figure 2-10). A 4-lane segment would have four 12-foot (3.6 m) travel lanes, two in each direction, and two 8-foot (2.4 m) shoulders for a total width of 64 feet (19.2 m).

Ditch and fill sections would have the following type of design for either a 2 or 4-lane segment. Ditch sections would have a front slope of 4:1 that would terminate at the required clear zone distance and then transition into a 2:1 back slope. Fill sections would have 4:1 slopes for fill heights up to 15 feet (4.5 m). For fill slopes over 15 feet (4.5 m), a slope of 2:1 with guardrail will be used. In areas where guardrail is required , an additional 5 feet

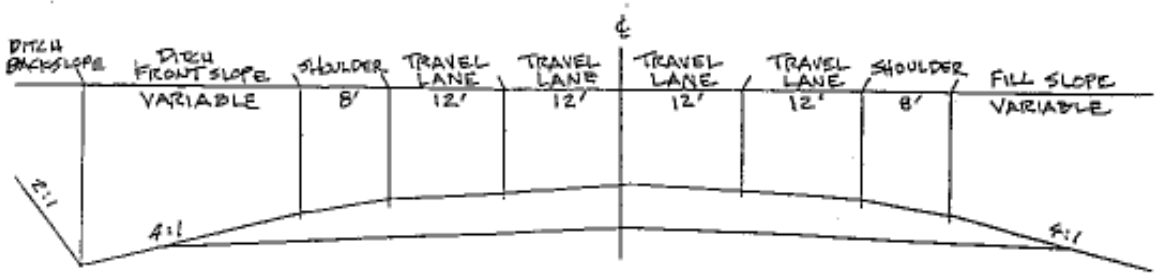
CHAPTER TWO - ALTERNATIVES

Figure 2-10. Typical Sections

2 - Lane Typical Section



4 - Lane Typical Section



(1.5 m) will be added onto the 8-foot (2.4 m) shoulder for a total of 13 feet (3.9 m). This extra width allows a 2-foot (0.6 m) offset to the face of the guardrail as well as 3 feet (0.9 m) of additional shoulder to accommodate the guardrail itself.

All three build alternatives intersect or cross the following in some way: Eight Rod Road, Route 104, the railroad on the east side of the river, Route 201/100, and Route 202/3. A new bridge will be constructed over Eight Rod Road at its intersection with the new facility. The railroad will also be grade separated and traffic will cross over it via the new bridge that crosses the Kennebec River. Intersections with Route 104, Route 201/100, and Route 202/3 will all be at-grade and signalized.

Alternatives A-1 and A-2 have the same intersection lane requirements. The Route 104 intersection would have dedicated left turn lanes on the east and westbound legs of the new roadway. The Route 201/100 intersection would have dedicated left turn lanes on the east bound leg of the new roadway, and both north and southbound legs of Route 201/100. The Route 202/3 intersection would have dedicated left turn lanes on the eastbound leg of the new roadway, with east and westbound legs of Route 202/3.

For Alternative B, the Route 104 intersection would have dedicated left turn lanes on the east and westbound legs of the new roadway, the Route 201/100 intersection would have dedicated left turn lanes on all four legs, and the Route 202/3 intersection would have dedicated left turn lanes on the east and westbound legs of Route 202/3.

A 45 mph design speed was used for all three build alternatives. This fits the 40 - 50 mph range for a Urban Arterial as described by AASHTO.

2.6.3 I-95 Interchange

All three build alternatives require a new full service interchange, located between Exit 31 and the existing northbound Augusta rest area, for access to I-95. This new interchange would have the same configuration for each of the retained alternatives. Because there is not enough distance between the new interchange and the rest area to prevent weaving conflicts in acceleration and deceleration lanes, current plans for this interchange include a trumpet configuration with a northbound collector-distributor. The collector-distributor would serve as a lower speed (35 mph) facility to allow merging and diverging traffic. The new northbound exit would serve both the build alternative and the existing northbound Augusta rest area. Once leaving I-95, motorists could exit to the new roadway or continue in to the rest area. A vehicle leaving the new roadway and heading northbound would enter the collector-

distributor and travel either to or past the rest area and enter I-95 along appropriate acceleration lanes north of the rest area.

Future Potential for Rest Area Relocation

The future potential for relocating the rest area to an area adjacent to the new interchange was identified by MDOT after the publication of the DEIS. The existing northbound Augusta I-95 rest area has many deficiencies including substandard deceleration and acceleration lanes, insufficient parking, handicapped accessibility concerns, and a failing septic system. The proposed new highway interchange presents an opportunity for the Department to address these deficiencies while simultaneously reducing construction and future maintenance costs for the proposed new interchange. More information on this potential future relocation has been included in Section 4.5.1, Secondary Impacts.

Federal Approval for Access to Interstate System

Federal Highway Administration (FHWA) approval is required to create new access points to the Interstate System (ref. 23 USC 111). MDOT will submit to FHWA a request for an access point for an interchange following the Record of Decision on the proposed action.

2.6.4 Preferred Alternative

Alternative B was selected as the Preferred Alternative based on the clear preference for this alignment by the City of Augusta and the preponderance of public opinion input to the study (see Chapter 5).